The Influence of Force Majeure of Non-government Factors on People's Willingness to Insurance in China

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Abstract: Except for investors, people usually regard insurance as a tool to transfer unknown risks. We believe that insurance can minimise financial losses when a risk occurs and reduce people's fears when disaster strikes. Therefore, some scholars put forward the hypothesis that people's willingness to buy insurance is related to some force majeure. From the perspective of behavioral finance, this paper selects indicators such as the rate of return of insurance stocks and insurance search index as proxy variables for insurance willingness. It also selects natural disasters and epidemics as proxy variables for force majeure other than government actions (referred to as force majeure in the text). Regression analysis was carried out on the above variables, and it was concluded that force majeure other than government actions was positively correlated with people's willingness to purchase insurance.

Keywords: Willingness to insurance, Insurance demand, Natural disasters, Epidemics

1. Introduction

2021 is the first year of economic recovery after the epidemic. Unfortunately, heavy rainstorms occurred in many parts of the country in this year. However, the insurance industry was still able to quickly join in the rescue after the epidemic hit, providing more than 8.4 billion yuan in compensation for post-disaster reconstruction in Henan and Shanxi. This shows that the insurance industry has strong economic vitality. In fact, the government's control over the market is limited, and the fundamental driving force for the development of the insurance industry lies in the needs and wishes of consumers. Therefore, we can infer that people have higher insurance awareness after natural disasters and epidemics. Looking back, force majeure has had an impact on people's willingness to insure more or less. In this context, this paper attempts to establish a link between the force majeure faced by insurance and people's willingness to buy insurance. On this basis, I further analyze people's demand for insurance products, so as to formulate development strategies for the insurance industry on the supply side.

2. Literature Review

Judging from the research results, scholars at home and abroad have done a lot of analysis on insurance willingness or demand. Most of them are more concerned about the role of economic factors and political factors. For example, Thomasson believes: "Providing tax incentives significantly promotes the demand for medical insurance" [1]. Gruber and Madrian argue that: "Once
unemployed, the unemployed person's health insurance demand will drop sharply" [2]. I quite agree with the above views. National policies and employment conditions will inevitably affect people's willingness to insure. But this influence is passive. In the above two cases, the change of people's willingness to buy insurance ignored the functionality of insurance, but valued the economic premise of buying insurance. In a survey of rural policy insurance, the team found that government premium subsidies are no longer the main reason for farmers to purchase agricultural insurance. To improve the coverage of agricultural insurance, the key is that farmers have a correct understanding of agricultural insurance and insurance companies can provide insurance products that meet the needs of farmers to avoid risks [3].

In my opinion, the most important function of insurance is compensation protection, and people's demand for insurance should be proactive. In China, no matter what the economic environment or economic benefits are, employers usually pay social insurance to employees, and parents usually buy some commercial insurance for their children. This shows that people's willingness to insure is mostly active. They pay more attention to the practicality of insurance. There is an underlying logic behind this phenomenon: people's willingness to insure is more closely related to risk. It can be divided into risk experience and risk prediction. This conclusion can be supported by many predecessors. When Wang Chao studied geological disaster insurance, he found that the residents' geological disaster insurance experience was significantly positively correlated with their willingness to buy insurance [4]; Yuan Feng, Liu Ling and Shao Xiangli believed that perceived usefulness and personal insurance characteristics had a significant impact on the willingness to buy insurance [5]. Positive significant effect, while perceived risk has negative significant effect on insurance willingness. Various studies have shown that, excluding the influence of government behavior factors, there is a positive correlation between other force majeure and insurance intention.

From the perspective of research methods, some scholars use questionnaires to quantify insurance willingness: Wang Dongni, Yi Jia and other scholars choose 0/1 variables to construct insurance willingness indicators, and use binary Logistic model for regression analysis [6][7]; some scholars Use official sampling survey data to establish a small sample: Xu Meifang used the" 2006 Shanghai Resident Health and Health Service Survey” data to set a multivariate consumption function, and used the ordinary least squares method to perform regression analysis [8]. However, whether a questionnaire or a sample survey is created, the scope of the research will be limited, so the representativeness of the results is not strong. At the same time, the influencing factors of insurance willingness are not single, and ordinary regression analysis cannot guarantee the quality of the model. Based on the above two points, this paper intends to expand the sample range when quantifying the insurance willingness index, and the data source is more macroscopic. For example, the use of Google Trends, National Bureau of Statistics data, Baidu search index and so on. In addition, before doing regression, this paper first conducts descriptive statistics on the data, and then studies the correlation between independent variables and dependent variables.

3. Theoretical Models and Assumptions

3.1. Theoretical Model

Technology Acceptance Model (TAM) is developed by Davis (1989) on the basis of rational behavior theory and planned behavior theory, and is used to study the user's acceptance of information systems.

On this basis, according to the research object and variable analysis, this paper constructs a model of influencing factors of investment willingness, as shown in Figure 2.

This paper defines perceived usefulness as the avoidance or diversification of risks by insurance, where risk refers to the force majeure of non-governmental factors such as natural disasters and epidemics. Perceived ease of use is the sophistication of issues related to insurance. Since the financial
situation and knowledge level of the target population changes very little in the short term, the diffusion of policy influence will also take a long time. In the short term, "perceived ease of use" has little effect on insurance willingness. Therefore, this paper studies the influence of "perceived usefulness" on the willingness to purchase insurance through horizontal and vertical comparisons in units of years.

Figure 1: Theoretical framework of the Technology Acceptance Model (TAM).

Figure 2: Model of influencing factors of insurance willingness.

3.2. Research Hypothesis

Force majeure is positively correlated with Chinese people's willingness to insure.

4. Empirical Analysis

4.1. Production-consumption Perspective

4.1.1. Force Majeure Makes Consumers Feel the Usefulness of Insurance Products

Table 1: Negative effects of natural disasters and epidemics.

<table>
<thead>
<tr>
<th>Time</th>
<th>Affected population</th>
<th>House damage</th>
<th>Crop affected area</th>
<th>Direct economic loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>138 million</td>
<td>1.76 million</td>
<td>19957.7 thousand hectares</td>
<td>370.15 billion yuan</td>
</tr>
<tr>
<td>2021</td>
<td>107 million</td>
<td>1.981 million</td>
<td>11739 thousand hectares</td>
<td>334.02 billion yuan</td>
</tr>
</tbody>
</table>
Natural disasters are associated with the destruction of physical and human capital and thus have a significant impact on economic activity and political stability [9][10]. In 2020, there will be frequent natural disasters in my country, causing adverse effects. According to government reports, in the main flood season of 2020, the southern region suffered the worst flood since 1998. Judging by the available data, the pandemic impact on the insurance market is similar to that of a natural disaster [11][12]. At the same time, 2020 is the first year of the outbreak, and a large area of the country has been shut down. It is difficult to complete post-disaster reconstruction and epidemic prevention and control at the same time with government assistance alone.

![China Insurance Consumer Confidence Index](image1)

Figure 3: China Insurance Consumer Confidence Index.

![“Insurance” Search Index](image2)

Figure 4: “Insurance” Search Index.

The survey shows that China's insurance industry has encountered difficulties since 2017. Specifically, the consumer confidence index fell, and people's search volume for insurance dropped significantly. Renn believes that the decline in confidence in public institutions is partly the result of improved public education, increased enthusiasm for public resources and benefits, the complexity
of social issues, and the diversity of values and lifestyles [13]. There are two theories to explain the above phenomenon.

Beijing Business Daily pointed out: "The main reasons why consumers do not want to buy insurance are saturated demand for insurance, economic conditions do not allow, and there are no suitable products." However, in 2019, when almost all industries faced development difficulties, the search volume of insurance began to gradually increase, and people's confidence index also rebounded. However, the focus of government work is not to encourage people to buy insurance. Therefore, it is not the guidance of the state that attracts people's attention, but the consumers themselves perceive the risk. Some people have suffered natural disasters or viruses and need to seek financial support, so they start to pay attention to insurance. Another part of people predicts that they may encounter risks, so they want to use insurance to prepare for risk dispersal. That is people perceive the usefulness of insurance.

Figure 5: Interaction between consumers and insurance companies.

Horizontal analysis of the proportion of consumers in the Asia-Pacific region and China on the acceptance of insurance products at different levels in the past two years. We found that Chinese consumers are significantly higher than the Asia-Pacific region in terms of the proportion of searches, purchases and planned purchases. This reflects the relatively strong willingness of Chinese consumers to purchase insurance. Keynes thought: when people's income increases. They will have a tendency to increase consumption. But in 2019, China's per capita national income was $10,310. By 2020, GNI has only risen by $220, a growth rate of only 1.56%, the slowest growth rate in a decade. Clearly, the reason for the high level of interest in insurance products is not because of increased income, but because of the prediction of risk or the lessons learned after experiencing it.

4.1.2. Force Majeure Increases People's Recognition and Recognition of Insurance Products

By longitudinally analyzing the attitudes of consumers in Asia Pacific and China towards insurance, we can find that: from 2020 to 2021, the proportion of Chinese consumers in insurance search and purchase will decrease, but the decrease is small. The proportion of people who are ignorant of insurance products fell by 11%. This shows that after the outbreak of the epidemic and natural disasters, Chinese consumers have a higher degree of recognition of insurance.

Obviously, the epidemic has had a big impact on the economy. Large-scale shutdowns and traffic control have resulted in a slowdown in China's GNI and GDP growth. However, in this case, the premium income of insurance companies does not decrease but increases. This shows that the
epidemic has forced consumers to pay attention to the prediction and dispersion of risks. Perceived usefulness played a role at this time, promoting people's willingness to invest in insurance.

![Figure 6: Consumer Insurance Program.](image)

Table 2: China's economic development in the past 10 years and the income and expenditure of insurance companies [14].

<table>
<thead>
<tr>
<th>Year</th>
<th>GNI</th>
<th>GDP</th>
<th>Premium income</th>
<th>Premium expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>483392.80</td>
<td>487940.20</td>
<td>14339.25</td>
<td>3929.37</td>
</tr>
<tr>
<td>2012</td>
<td>537329.00</td>
<td>538580.00</td>
<td>15487.93</td>
<td>4716.32</td>
</tr>
<tr>
<td>2013</td>
<td>588141.20</td>
<td>592963.20</td>
<td>17222.24</td>
<td>6212.90</td>
</tr>
<tr>
<td>2014</td>
<td>644380.20</td>
<td>643563.10</td>
<td>20234.81</td>
<td>7216.21</td>
</tr>
<tr>
<td>2015</td>
<td>685571.20</td>
<td>688858.20</td>
<td>24282.52</td>
<td>8674.14</td>
</tr>
<tr>
<td>2016</td>
<td>742694.10</td>
<td>746395.10</td>
<td>30904.15</td>
<td>8724.17</td>
</tr>
<tr>
<td>2017</td>
<td>830945.70</td>
<td>832035.90</td>
<td>36577.77</td>
<td>26743.20</td>
</tr>
<tr>
<td>2018</td>
<td>915243.50</td>
<td>919281.10</td>
<td>42644.80</td>
<td>12894.00</td>
</tr>
<tr>
<td>2019</td>
<td>983751.20</td>
<td>986515.20</td>
<td>36577.77</td>
<td>26743.20</td>
</tr>
<tr>
<td>2020</td>
<td>1008782.50</td>
<td>1015986.20</td>
<td>45257.34</td>
<td>13907.00</td>
</tr>
</tbody>
</table>

4.2. Financing-investment Perspective

Table 3: Annualized rate of return of China's four major insurance companies.

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>China Life</td>
<td>0.57</td>
<td>-0.67</td>
<td>0.67</td>
<td>-0.31</td>
<td>0.72</td>
<td>0.11</td>
<td>-0.20</td>
<td>0.01</td>
</tr>
<tr>
<td>China Pacific Insurance</td>
<td>-0.03</td>
<td>-0.77</td>
<td>1.28</td>
<td>-0.10</td>
<td>0.37</td>
<td>0.04</td>
<td>-0.27</td>
<td>-0.25</td>
</tr>
<tr>
<td>PINGAN</td>
<td>1.13</td>
<td>-0.74</td>
<td>-0.02</td>
<td>0.02</td>
<td>0.56</td>
<td>-0.23</td>
<td>-0.40</td>
<td>-0.1</td>
</tr>
<tr>
<td>Tianmao Group</td>
<td>2.81</td>
<td>-0.71</td>
<td>1.25</td>
<td>0.34</td>
<td>0.26</td>
<td>-0.30</td>
<td>-0.31</td>
<td>0.06</td>
</tr>
</tbody>
</table>
The data in Table 3 and Table 4 shows that the annualized rate of return of the four major insurance companies in China decreased significantly in the year of the Wenchuan earthquake and in the two years after the outbreak of the new crown epidemic. But it gradually picked up after the disaster was brought under control. Based on this, it is inferred that after the disaster, investors will not have any investment action in the short term. However, the public tends to raise their awareness of risks after a disaster, which brings income-generating opportunities for insurance companies, which in turn makes investors optimistic about insurance stocks. In other words, people's willingness to insure will increase after experiencing force majeure.

Table 5: Correlation Result.

|          | Estimate      | Pr (>|t|) | in conclusion   |
|----------|---------------|----------|-----------------|
| X1       | 6.219e-05     | 0.0557   | positive correlation |
| X2       | -0.05518      | 0.391    | negative correlation |
| X3       | 0.007604      | 0.300    | positive correlation |

X1: Number of geological hazards  
X2: Number of earthquakes  
X3: Number of major marine disasters

Through regression analysis, we can find that the average annualized rate of return of the four major insurance stocks is mostly positively correlated with the number of common natural disasters, which can be supplemented by the conclusion in Table 5.

5. Conclusion and Implications

This paper argues that to study people's willingness to buy insurance, it is first necessary to classify the research population: one is consumers and the other is investors. Based on empirical analysis, we can draw two conclusions: First, from the perspective of production and consumption, the starting
point for consumers to buy insurance is to reduce the losses caused by risks. People perceive the usefulness of insurance products after experiencing epidemics and natural disasters. Therefore, people will be more closely connected with insurance companies, and their attention and recognition of insurance will be improved. That is, people's willingness to purchase insurance will increase after encountering force majeure. Especially a large-scale disaster like the epidemic has a more obvious stimulus effect on consumers. Most people are not direct victims, so the increase in people's willingness to insure is more due to risk prediction.

Secondly, from the perspective of financing and investment, the main purpose of investors is to obtain economic benefits. Force majeure will hit the economy to a certain extent and inhibit the development of many industries. Insurance stock yields will also be negatively affected in the short term. But as people become more willing to insure, yields will pick up. It can be said that when the economy is impacted by force majeure, the improvement of people's willingness to buy insurance has played a positive role in the insurance stock market. In short, the previous hypothesis of the article is valid.

Dialectical materialism holds that production determines consumption, and consumption reacts to production. Insurance is also a consumer product, so it also follows this rule. In order for the insurance market to develop rapidly, the supply side must understand the influencing factors of insurance demand. In other words, if insurers want to open up the market further, they must study the wishes of policyholders in depth. Strategies based on the wishes of consumers can win the hearts of insurance companies.

This paper finds that the increase of people's willingness to buy insurance is roughly positively related to the force majeure of non-government factors. However, the existing insurance products not only have few types, but also have high thresholds, which are not enough to meet some specific needs of people. I think insurance companies can customize insurance plans for policyholders.

Two points should be noted in the customized solution. One is personalization. For example, a doctor may have purchased liability insurance to prevent medical malpractice. But if he is attacked by a patient, there is no special insurance to reduce his losses. It is difficult to obtain financial assistance if you apply for a claim to an insurance company on the basis of accident insurance. If the status quo cannot be changed, more and more people will lose confidence in insurance companies and products. So I suggest: Agents can do a detailed client background check when contacting policyholders. According to the other party's age, identity, status and other factors, make statistics on known risks and predict unknown risks, and then refine the insurance plan. The second is humanization. Yi Jia believes that insurance product information mainly includes product functions, terms and precautions. However, the insured person is often not easy to understand as a non-professional. So I'd recommend giving the agent a second-in-command. The agent is responsible for formulating the plan, and the deputy assists in explaining the plan. I think that if insurance companies can introduce personalized and user-friendly products, then maybe people's willingness to buy insurance will be improved to a greater extent.

References


